

1. A method for message-based intelligent tandeming of an incoming call to an application node in telecommunication systems, the method comprising:

(a) receiving an incoming call leg directed to a called party directory number;

(b) transmitting a first message to a database to determine call treatment instructions;

(c) receiving a second message containing a tandem parameter;

(d) when the tandem parameter does not indicate tandeming, routing the incoming call leg to the called party directory number;

(e) when the tandem parameter does indicate tandeming, obtaining a routing parameter and performing digit analysis of the called party directory number;

(f) when the digit analysis has been performed successfully, tandeming the incoming call leg to the application node; and

(g) when the digit analysis has not been performed successfully, providing a default mode for the incoming call leg.

2. The method of claim 1, wherein step (g) further comprises:

transmitting a third message to the database, the third message indicating a tandeming failure.

3. The method of claim 2, wherein the tandeming failure is indicated as a predetermined value in an ANSI-compatible redirection reason.

4. The method of claim 2, further comprising:

including a request for secondary treatment instructions in the third message; and

upon reception of a fourth message in response, performing a secondary treatment, of a plurality of secondary treatments, designated in the fourth message.

5. The method of claim 4, wherein the plurality of secondary treatments include routing the incoming call leg to the called party directory number, forwarding the incoming call leg to a second directory number, forwarding the incoming call leg to a message service, and providing for an announcement to a calling party of the incoming  
5 call leg.

6. The method of claim 4, wherein the third message is an ANSI-compatible transfer to number message.

10 7. The method of claim 1, wherein the tandem parameter has a first predetermined value to indicate that the incoming call leg is not to be tandemmed to the application node, and wherein the tandem parameter has a second predetermined value to indicate that the incoming call leg is to be tandemmed to the application node.

15 8. The method of claim 1, wherein the tandem parameter is a predesignated value of a single-octet field within an ANSI-compatible calling features indicator parameter.

20 9. The method of claim 1, wherein the tandem parameter is a predesignated value of a field within an ANSI-compatible message of a plurality of ANSI-compatible messages, the plurality of ANSI-compatible messages including a registration notification return result, a qualification request return result, a location request return result, and a qualification directive (invoke).

25 10. The method of claim 1, wherein the first message is an ANSI-compatible location request message, and the second message is an ANSI-compatible location request return result message.

000000-247550

11. An apparatus for message-based intelligent tandeming of an incoming call to an application node in telecommunication systems, the apparatus comprising:

a network interface for reception of an incoming call leg directed to a called party directory number;

5 a memory; and

a processor coupled to the network interface and to the memory, wherein the processor, when operative, is configured to transmit through the network interface a first message to a database to determine call treatment instructions, and to receive through the network interface a second message containing a tandem parameter; the

10 processor further configured, when the tandem parameter does not indicate tandeming, to route the incoming call leg to the called party directory number; the processor further configured, when the tandem parameter does indicate tandeming, to obtain a routing parameter and to perform digit analysis of the called party directory number; and the processor further configured, when the digit analysis has been performed successfully, to  
15 tandem the incoming call leg to the application node, and when the digit analysis has not been performed successfully, to provide a default mode for the incoming call leg.

12. The apparatus of claim 11, wherein the processor is further configured to transmit through the network interface a third message to the database, the third message  
20 indicating a tandeming failure.

13. The apparatus of claim 12, wherein the tandeming failure is indicated as a predetermined value in an ANSI-compatible redirection reason.

25 14. The apparatus of claim 12, wherein the processor is further configured to include a request for secondary treatment instructions in the third message, and upon reception through the network interface of a fourth message in response, to perform a secondary treatment, of a plurality of secondary treatments, designated in the fourth message.

30

15. The apparatus of claim 14, wherein the plurality of secondary treatments include routing the incoming call leg to the called party directory number, forwarding the incoming call leg to a second directory number, forwarding the incoming call leg to a message service, and providing for an announcement to a calling party of the incoming call leg.

16. The apparatus of claim 14, wherein the third message is an ANSI-compatible transfer to number message.

17. The apparatus of claim 11, wherein the tandem parameter has a first predetermined value to indicate that the incoming call leg is not to be tandemmed to the application node, and wherein the tandem parameter has a second predetermined value to indicate that the incoming call leg is to be tandemmed to the application node.

18. The apparatus of claim 11, wherein the tandem parameter is a predesignated value of a single-octet field within an ANSI-compatible calling features indicator parameter.

19. The apparatus of claim 11, wherein the tandem parameter is a predesignated value of a field within an ANSI-compatible message of a plurality of ANSI-compatible messages, the plurality of ANSI-compatible messages including a registration notification return result, a qualification request return result, a location request return result, and a qualification directive (invoke).

20. The apparatus of claim 11, wherein the first message is an ANSI-compatible location request message, and the second message is an ANSI-compatible location request return result message.

21. A system for message-based intelligent tandeming of an incoming call to an application node in telecommunication systems, the system comprising:

an adjunct network entity, the adjunct network entity having the application node;

5 a database; and

a switching center couplable to the adjunct network entity and to the database, wherein the switching center, when operative, is configured to receive an incoming call leg directed to a called party directory number, to transmit a first message to the database to determine call treatment instructions, and to receive from the database  
10 a second message containing a tandem parameter; the switching center further configured, when the tandem parameter does not indicate tandeming, to route the incoming call leg to the called party directory number; the switching center further configured, when the tandem parameter does indicate tandeming, to obtain a routing parameter and to perform digit analysis of the called party directory number; and the  
15 switching center further configured, when the digit analysis has been performed successfully, to tandem the incoming call leg to the application node, and when the digit analysis has not been performed successfully, to provide a default mode for the incoming call leg.

22. The system of claim 21, wherein the switching center is further configured to transmit a third message to the database, the third message indicating a tandeming failure.

23. The system of claim 22, wherein the tandeming failure is indicated as a  
25 predetermined value in an ANSI-compatible redirection reason.

24. The system of claim 22, wherein the switching center is further configured to include a request for secondary treatment instructions in the third message, and upon reception of a fourth message in response, to perform a secondary treatment, of a  
30 plurality of secondary treatments, designated in the fourth message.

25. The system of claim 24, wherein the plurality of secondary treatments include routing the incoming call leg to the called party directory number, forwarding the incoming call leg to a second directory number, forwarding the incoming call leg to a message service, and providing for an announcement to a calling party of the incoming call leg.

26. The system of claim 24, wherein the third message is an ANSI-compatible transfer to number message.

27. The system of claim 21, wherein the tandem parameter has a first predetermined value to indicate that the incoming call leg is not to be tandemmed to the application node, and wherein the tandem parameter has a second predetermined value to indicate that the incoming call leg is to be tandemmed to the application node.

28. The system of claim 21, wherein the tandem parameter is a predesignated value of a single-octet field within an ANSI-compatible calling features indicator parameter.

29. The system of claim 21, wherein the tandem parameter is a predesignated value of a field within an ANSI-compatible message of a plurality of ANSI-compatible messages, the plurality of ANSI-compatible messages including a registration notification return result, a qualification request return result, a location request return result, and a qualification directive (invoke).

30. The system of claim 21, wherein the first message is an ANSI-compatible location request message, and the second message is an ANSI-compatible location request return result message.

31. The system of claim 21, wherein the database is a home location register.

32. The system of claim 21, wherein the database is a visitor location register.

33. The system of claim 21, wherein the switching center is a mobile switching center.

5 34. The system of claim 21, wherein the switching center is a wireline switching center.

35. The system of claim 21, wherein the application node is a prepaid telecommunication service.

10

36. The system of claim 21, wherein the application node is a calling party pays telecommunication service.

15

37. The system of claim 21, wherein the application node is a one number telecommunication service.

38. The system of claim 21, wherein the switching center transmits and receives a plurality of messages, to and from the database, via a second switching center.

20

39. A tandem parameter, the tandem parameter for use in a message transmitted from a database to a network switch, the tandem parameter comprising:  
a first predetermined value, the first predetermined value designating that no tandeming is to be performed for an incoming call leg to the network switch; and  
a second predetermined value, the second predetermined value designating  
25 that tandeming is to be performed for the incoming call leg to the network switch.

40. The tandem parameter of claim 39, wherein the tandem parameter is encoded as a single octet.

30

41. The tandem parameter of claim 39, wherein the tandem parameter is encoded as a plurality of octets.

42. The tandem parameter of claim 39, wherein the tandem parameter is encoded as a field within an ANSI-compatible calling features indicator parameter.

- 5 43. The tandem parameter of claim 39, wherein the tandem parameter is encoded as a field within an ANSI-compatible message of a plurality of ANSI-compatible messages, the plurality of ANSI-compatible messages including a registration notification return result, a qualification request return result, a location request return result, and a qualification directive (invoke).

10

005030" 2476550